



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,683	01/24/2002	Paul Charlton	0139US-HYDRAMATIC	5109

23521 7590 01/31/2003

SALTAMAR INNOVATIONS
30 FERN LANE
SOUTH PORTLAND, ME 04106

EXAMINER

SALDANO, LISA M

ART UNIT	PAPER NUMBER
----------	--------------

3673

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,683

Applicant(s)

CHARLTON ET AL.

Examiner

Lisa M. Saldano

Art Unit

3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because of the inclusion of legal phraseology, "means" in lines 5 and 6, and "said" in lines 14, 17 and 21. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: On page 11, line 9, the section heading "Brief Description of Drawing" should be inserted after the section heading "Detailed Description". Appropriate correction is required.

Claim Objections

1. Claim 5 is objected to because of the following informalities: line 2 of this claim states the limitation of “retraction indepedant of said spindle.” It is assumed that the applicant intended to state *independent*, instead of “indepedant.” Appropriate correction is required.
2. Claim 23 is objected to because of the following informalities: line 1 of this claim states the limitation wherein “...two grouting materials discharged...” It is assumed that the applicant meant “...two grouting materials are discharged...” Appropriate correction is required.
3. Claim 26 is objected to because of the following informalities: line 1 of this claim duplicates the phrase “said passage is”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1, line 7 recites the limitation wherein “...when said rock bolt is inserted in said member and when said injection member engages...” However, prior claims fail to make reference to an “injection member.” Instead, prior claims make prior reference to an “injection

Art Unit: 3673

assembly.” There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, it has been assumed that the injection member is the injection assembly.

6. Claim 6, line 1 recites the limitation wherein "...said injection nozzle functions as a shut off..." However, prior claims fails to make prior mention of an injection nozzle. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 26, line 1 recites the limitation wherein "...an injection assembly which delivers said grouting material." However, prior claims fail to mention grouting material. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4, 14, 17-24 and 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Standish et al (5,374,140).

Regarding claims 1, 17, 18, 19 and 20-23, Standish discloses a drillable ground support bolt comprising a base block 12 with means to facilitate attachment to a drilling machine (see

Art Unit: 3673

Fig. 5 and column 3, lines 54-60), means 13 for driving a spindle having a member or sprocket 15 at one end that receives a proximal end of a rock bolt 31 including an internal cavity and an injection assembly 14 including passages 17, 18 for retaining grouting compound wherein the passages are in communication with the internal cavity of the bolt 31 (see column 3, lines 55-70). The grouting compound is injected until it exits the internal cavity of the bolt, engaging the wall of the borehole (see column 4, lines 28-41). The passages are substantially in alignment with the internal cavity (see Figs. 5 and 6). The multiple passages may be used to discharge more than one grouting material into the said cavity.

Regarding claims 2 and 3, Standish discloses the bolt above wherein a spindle 13 is rotatable and a chuck 15 engages the proximal end of a bolt 31, thereby rotating the rock bolt.

Regarding claims 4 and 14, Standish discloses the bolt above wherein passage 17 provides flushing fluid flows of water in communication with the bolt 31 internal cavity (see column 4, lines 29-44). The water flushes debris from the hole during drilling.

Regarding claims 24 and 25, Standish discloses the bolt above and a method of insertion of that self-drilling bolt comprising placing a drilling machine and bolt in alignment with a drilling location, engaging the bolt with a drilling head, using the bolt to drill a hole in rock strata, flushing the borehole with water to remove debris while drilling, injecting the borehole with grouting compound until the borehole is filled with a bonding compound (see column 4, lines 1-16). The injection assembly shuts off the water during injection of grouting material into the cavity (see column 4, lines 29-35).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Standish et al as applied to claim 4 above, and in view of Lane et al (4,655,644).

Standish et al disclose the rock bolt assembly as described above wherein the injection assembly shuts off the water during injection of grouting material into the cavity (see column 4, lines 29-35). However, Standish et al fail to disclose that the injection assembly is independent of the spindle.

Lane et al disclose a binder injecting rock bolt assembly wherein the injecting assembly is independent of a spindle that is used to rotate the bolt into place (see Fig. 1). After the bolt has been placed in-situ, an injecting nozzle 120, 114 is extended into sealing engagement with the proximal end 36, 38 of a bolt (see Fig. 1 and column 7, lines 19-44). Grouting compound is injected into the internal cavity 28 of a bolt 20. The grouting compound then exits the internal cavity through ports 54 located at a distal end of the bolt and fill the space between borehole 22 and bolt until it fully occupies that space. The nozzles are then retracted from engagement with the bolt.

Art Unit: 3673

It would have been obvious to one of ordinary skill in the art to apply Lane et al's teaching of an independent injection assembly to the rock bolt assembly taught by Standish et al's because Standish et al's assembly would still require a static assembly to inject grouting compound into Standish et al's cement nipples 18. The application of Lane et al's assembly to Standish et al's assembly is completely compatible and consistent with the teachings of both inventions.

12. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Standish et al as modified by Lane et al (4,655,644) as applied to claim 6 above, and further in view of Rolston (4,289,427). Standish et al and Lane et al disclose the rock bolt assembly teachings as described above wherein both assemblies teach the use of at least two passages. To review, Standish teaches an internal cavity, filling the cavity and borehole with grouting material, mutual rotation of a recess and a rock bolt placed in the recess, hexagonal profiles of rotating members (see column 3, lines 56-60) and a self-drilling bolt 31. Lane et al teach extension and retraction of injection nozzles 114, 120 into passages that communicate with the internal cavity of a bolt to place grouting material and set the bolt in place. This is done after the bolt have been drilled into place.

However, both fail to disclose two *concentric* passages. Rolston teaches the use of two concentric passages 26 (see Fig.2) to deliver bonding agents or grouting material into the borehole of a roof bolt installation assembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the passages at 18 described by Standish et al be concentric in nature as

Art Unit: 3673

taught by Rolston. The difference is merely a change in the shape of the passages because the passages taught by Standish et al are isolated and could also be used to keep grouting material separate until they enter the cavity and mix to form a resin.

13. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Standish et al as applied to claim 14 above, in view of Rolston et al (4,289,427).

Standish et al disclose the rock bolt assembly teachings as described above wherein the assembly teaches the use of at least two passages. To review, Standish teaches an internal cavity, filling the cavity and borehole with grouting material, mutual rotation of a recess and a rock bolt placed in the recess, hexagonal profiles of rotating members (see column 3, lines 56-60) and a self-drilling bolt 31.

However, Standish et al fail to disclose two *concentric* passages. Rolston teaches the use of two concentric passages 26 (see Fig.2) to deliver bonding agents or grouting material into the borehole of a roof bolt installation assembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the passages at 18 described by Standish et al be concentric in nature as taught by Rolston. The difference is merely a change in the shape of the passages because the passages taught by Standish et al are isolated and could also be used to keep grouting material separate until they enter the cavity and mix to form a resin.

14. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Standish et al as applied to claim 24 above, in view of Lane et al (4,655,644). Standish et al

Art Unit: 3673

disclose the rock bolt assembly teachings as described above. However, Standish et al fail to teach the use of an advancing nozzle.

Lane et al teach extension and retraction of injection nozzles 114, 120 into passages that communicate with the internal cavity of a bolt to place grouting material and set the bolt in place. This is done after the bolt have been drilled into place.

It would have been obvious to one of ordinary skill in the art to apply Lane et al's teaching of an independent injection assembly to the rock bolt assembly taught by Standish et al's because Standish et al's assembly would still require a static assembly to inject grouting compound into Standish et al's cement nipples 18. The application of Lane et al's assembly to Standish et al's assembly is completely compatible and consistent with the teachings of both inventions. Furthermore, the nozzle would have to extend and retract in order to be placed properly and engage the rock bolt.

15. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lane et al (4,655,644). Lane et al disclose a binder-injecting rock-bolt. However, the apparatus limitations disclosed by Lane et al teach the basic method steps required in the method claims stated by the applicant. Specifically, Lane et al disclose a rock bolt assembly that, after the bolt has been placed in-situ, advances an injecting nozzle into sealing engagement with the proximal end of a bolt 20 (see Fig. 1 and column 7, lines 19-44). Grouting compound is injected into the internal cavity 28 of a bolt 20. The grouting compound then exits the internal cavity through ports 54 located at a distal end of the bolt and fill the space between borehole 22 and bolt until it fully occupies that space. The nozzles are then retracted from engagement with the bolt.

Art Unit: 3673

Although Lane et al fails to specifically disclose the method steps of using the rock bolt assembly, it would have been obvious to one of ordinary skill in the art to develop the method claims stated by the applicant from the binder-injecting teachings of Lane et al because the apparatus teaches the basic method steps stated in the applicant's method claims. Furthermore, it would have been obvious to incorporate the assembly along with a drilling machine because these features are quite common and have been used on drilling assemblies for many years.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hibbart et al (4,420,277) disclose a mine roof driller/bolter apparatus and method. Turzillo (3,815,368) discloses a method for installing concrete anchor piles in-situ. Lundmark (EP0126046) discloses a method of rock bolting, a device and a roof bolting apparatus. Gruber (5,044,832) discloses a method and arrangement for setting anchors on loose rock. Gruber (5,653,557) disclose an injection tube and method for placing a ground anchor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa M. Saldano whose telephone number is 703-605-1167. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on 703-308-2978. The fax phone numbers

Art Unit: 3673

for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

lms
January 27, 2003



Jong-Suk (James) Lee
Patent Examiner
AU 3673